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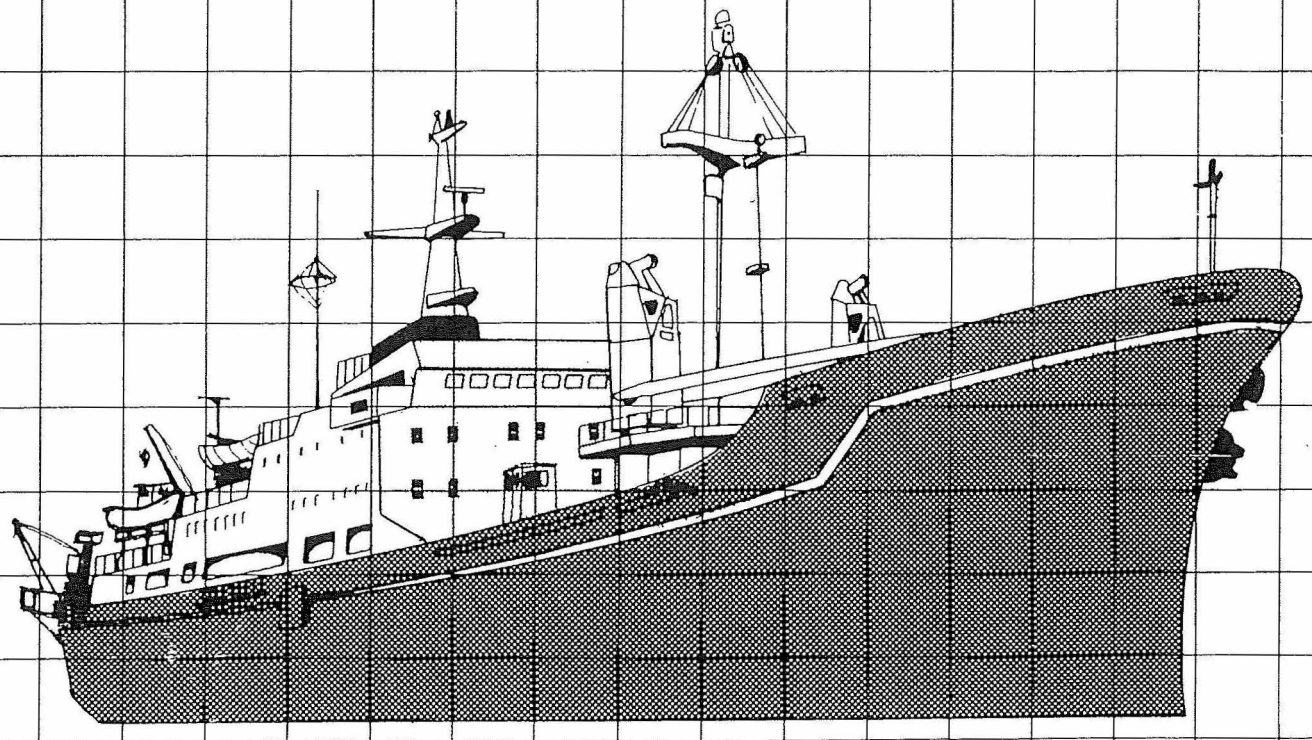
I F R T P

Les rapports des campagnes à la mer

Campagnes **SKALP** 1987 et 1988
aux îles Kerguelen
à bord des navires "SKIF" et "KALPER"

par Guy DUHAMEL

N° 93-01



Preliminary list of the cephalopod fauna from the upper oceanic layers of the Kerguelen islands during the "Skif" cruises (February 1987 to March 1988).

Liste préliminaire des céphalopodes des horizons océaniques superficiels entourant les îles Kerguelen collectés pendant les campagnes du "Skif" (février 1987 à Mars 1988)

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On the following some remarks are given on the Kerguelen cephalopod paralarvae found in the Bongo samples of the "Skif" cruises 1987 and 1988.

Material and Methods

Cephalopods have been separated from the Bongo plankton samples and preserved in buffered formalin diluted seawater solution. Labels of station including number of the two nets have been joined with specimens (the characteristics of the stations can be easily found in the Bongo ichthyoplancton report). The specimens have been identified at lab, measured (mantle length in mm).

Results

Tables (*1 to 5)* show the identifications and measurements of specimens for each cruise. Dorsal mantle length frequencies concern only the most abondant species in the catches *Brachioteuthis riisei* and are displayed for each cruise (*fig. 1*). The dorsal mantle/tentacle lengths relationships can be established for the species (*fig. 2*).

Comments

Brachioteuthis riisei (family Brachioteuthidae)

Recent literature still considers *Brachioteuthis picta* as the common

Brachioteuthis species in the Southern Ocean. This family is in revision and according to Russian and American authors the species which occurs in the Southern Ocean most probably is *Brachioteuthis riisei* . It is a very common species that is widely distributed in the Southern Ocean. Remarkably, there are no considerable records of this squid in the stomachs of birds, whales and seals the length frequency distributions are compiled for the various cruise legs (*fig. 1*); it looks as if there is a slight growth indication of the species from February to April 1987. Moreover a graph concerning the ratio of dorsal mantle length to tentacle length has added for 73 specimens which could be measured without problems (*fig.* 2). This is a good method to show that you are dealing with one species. The very big specimens have been neglected in this drawing because their tentacles were heavily contracted (preservation artefact).

Moroteuthis sp. (familly Onychoteuthidae)

Adult specimens of this genus are common components in the diet of birds, seals and whales in the Southern Ocean. The early life stages (paralarvae) of the genus are totally unknown. There are only a few obscure publications who try to describe the early life stages. In contrast to the Brachioteuthidae the paralarvae of *Moroteuthis* are totally absent in plankton tows conducted so far in the Southern Ocean. We believe, however, that spawning grounds of this group are in the vicinity of sub-Antarctic islands. The identification of this genus is very tentative.

Gonatus antarcticus (familly Gonatidae)

This is the only species ot the family Gonatidae which occurs in the Southern Ocean. But, again it must be confessed that the identification is very preliminary. The early life stages of this group are very similar to those of the Onychoteuthidae. They can be easily mixed. The families are closely related. And like the paralarvae of *Moroteuthis,* early life stages of *Gonatus antarcticus* are not described yet.

Ommastrephidae indet

Most probably the single paralarvae of this group found in the "Skif" samples is a *Todarodes* species, but at this stage it cannot be said without doubt. We have to leave it with the family name.

Tab. 1 - SKIF 1 : Summer 1987 (3. - 15. FEB 1987)
Cephalopods from Bongo samples

Station No.	Date	Cephalopod specimens	Mantle leng
11/BGO2	10 FEB	*Moroteuthis* sp.	6.7 mm
23/BGO	11 FEB	*Brachioteuthis riisei*	6.9 mm
24/BGO2	11 FEB	*Brachioteuthis riisei*	28.2 mm
41/BGO2	15 FEB	*Moroteuthis* sp.	6.1 mm
43/BGO1	14 FEB	*Brachioteuthis riisei*	5.6 mm
43/BGO2	14 FEB	*Brachioteuthis riisei*	3.9 mm
44/BGO1	14 FEB	*Gonatus antarcticus*	8.9 mm
44/BGO2	14 FEB	*Brachioteuthis riisei*	6.8 mm
		Brachioteuthis riisei	6.3 mm
47/BGO2	14 FEB	*Gonatus antarcticus*	10.9 mm
52/BGO1	04 FEB	*Brachioteuthis riisei*	6.7 mm
53/BGO1	03 FEB	*Gonatus antarcticus*	11.6 mm
65/BGO1	05 FEB	*Brachioteuthis riisei*	4.4 mm
65/BGO2	05 FEB	*Brachioteuthis riisei*	6.7 mm
66/BGO1	05 FEB	*Brachioteuthis riisei*	5.5 mm
		Brachioteuthis riisei	4.7 mm
		Brachioteuthis riisei	3.6 mm
66/BGO2	05 FEB	*Brachioteuthis riisei*	5.5 mm
		Brachioteuthis riisei	4.7 mm
71/BGO1	08 FEB	*Brachioteuthis riisei*	13.3 mm
75/BGO	07 FEB	*Brachioteuthis riisei*	9.0 mm
		Moroteuthis sp.	5.0 mm
81/BGO	08 FEB	*Brachioteuthis riisei*	5.6 mm
		Brachioteuthis riisei	5.0 mm
82/BGO	08 FEB	*Moroteuthis* sp.	5.5 mm
83/BGO	08 FEB	*Moroteuthis* sp.	6.1 mm
84/BGO	09 FEB	*Moroteuthis* sp.	5.6 mm
85/BGO2	09 FEB	*Brachioteuthis riisei*	5.1 mm
91/BGO1	06 FEB	*Brachioteuthis riisei*	15.0 mm

Summary:	N=20	*Brachioteuthis riisei*
	N= 3	*Gonatus antarcticus*
	N= 6	*Moroteuthis* sp.

Total:	N=29	Cephalopod specimens

Tab. 2 - SKIF 2 : Autumn 1987 (31. MAR - 12. APR 1987)
Cephalopods from Bongo samples

Station No.	Date	Cephalopod specimens	Mantle length
26/BGO2	09 APR	*Brachioteuthis riisei*	36.0 mm
44/BGO	12 APR	*Brachioteuthis riisei*	9.4 mm
51/BGO	01 APR	*Moroteuthis* sp.	8.9 mm
54/BGO1	01 APR	*Brachioteuthis riisei*	11.8 mm
		Brachioteuthis riisei	10.1 mm
54/BGO2	01 APR	*Brachioteuthis riisei*	10.0 mm
		Brachioteuthis riisei	7.8 mm
		Brachioteuthis riisei	5.5 mm
56/BGO2	01 APR	*Brachioteuthis riisei*	11.2 mm
64/BGO2	02 APR	*Brachioteuthis riisei*	13.9 mm
74/BGO1	05 APR	*Brachioteuthis riisei*	12.9 mm
75/BGO	05 APR	*Brachioteuthis riisei*	12.4 mm
		Brachioteuthis riisei	11.2 mm
85/BGO2	07 APR	*Brachioteuthis riisei*	10.4 mm
91/BGO	04 APR	*Brachioteuthis riisei*	6.4 mm
92/BGO1	04 APR	*Brachioteuthis riisei*	8.9 mm
92/BGO2	04 APR	*Brachioteuthis riisei*	18.1 mm
		Brachioteuthis riisei	8.1 mm
93/BGO2	04 APR	*Brachioteuthis riisei*	12.4 mm

Summary:	N=18	*Brachioteuthis riisei*
	N= 1	*Moroteuthis* sp.
Total:	N=19	Cephalopod specimens

Tab. 3 -SKIF 3 : Winter 1987 (24. JUL - 6. AUG 1987)
Cephalopod from Bongo samples

Station No.	Date	Cephalopod specimen	Mantle length
46/BGO1	05 AUG	pteropod, no cephalopod in sample	
47/BGO1	05 AUG	*Brachioteuthis riisei*	7.8 mm

Summary:	N= 1	*Brachioteuthis riisei*
Total:	N= 1	Cephalopod specimens

Tab. 4 - SKIF 4 : Summer 1988 (7. - 20. FEB 1988)
Cephalopods from Bongo samples

Station No.	Date	Cephalopod specimens	Mantle leng
11/BGO	17 FEB	no specimen found	
13/BGO	17 FEB	*Brachioteuthis riisei*	7.0 mm
15/BGO	16 FEB	*Brachioteuthis riisei*	22.7 mm
		Brachioteuthis riisei	22.4 mm
		Brachioteuthis riisei	20.6 mm
21/BGO	18 FEB	*Brachioteuthis riisei*	21.1 mm
25/BGO	18 FEB	*Brachioteuthis riisei*	≈5.3 mm
26/BGO	18 FEB	*Brachioteuthis riisei*	16.5 mm
		Ommastrephidae indet.	11.1 mm
32/BGO	20 FEB	*Brachioteuthis riisei*	6.9 mm
42/BGO	07 FEB	*Gonatus antarcticus*	13.7 mm
43/BGO	07 FEB	*Brachioteuthis riisei*	≈2.0 mm
		Brachioteuthis riisei	3.1 mm
		Brachioteuthis riisei	3.7 mm
		Brachioteuthis riisei	4.0 mm
		Brachioteuthis riisei	4.2 mm
		Brachioteuthis riisei	4.3 mm
		Brachioteuthis riisei	5.3 mm
		Brachioteuthis riisei	5.7 mm
		Gonatus antarcticus	13.6 mm
51/BGO	10 FEB	*Brachioteuthis riisei*	4.5 mm
53/BGO	10 FEB	*Brachioteuthis riisei*	7.8 mm
		Brachioteuthis riisei	7.0 mm
		Gonatus antarcticus	11.8 mm
		Gonatus antarcticus	8.5 mm
56/BGO	09 FEB	*Brachioteuthis riisei*	9.0 mm
62/BGO	11 FEB	*Brachioteuthis riisei*	9.2 mm
65/BGO	12 FEB	*Brachioteuthis riisei*	5.1 mm
72/BGO	14 FEB	*Gonatus antarcticus*	4.3 mm
76/BGO	14 FEB	*Gonatus antarcticus*	19.0 mm
84/BGO	15 FEB	*Brachioteuthis riisei*	3.8 mm
		Gonatus antarcticus	5.6 mm
85/BGO	16 FEB	*Brachioteuthis riisei*	≈4.0 mm
91/BGO	13 FEB	*Brachioteuthis riisei*	3.1 mm
		Brachioteuthis riisei	4.0 mm
		Brachioteuthis riisei	4.0 mm
		Brachioteuthis riisei	5.0 mm
		Brachioteuthis riisei	5.3 mm
		Brachioteuthis riisei	5.4 mm
		Brachioteuthis riisei	7.5 mm
93/BGO	13 FEB	*Brachioteuthis riisei*	9.5 mm

Summary:	N=32	*Brachioteuthis riisei*
	N= 9	*Gonatus antarcticus*
	N= 1	Ommastrephidae indet.

Total:	N=42	Cephalopod specimens

Tab. 5 - Interseason 1987 and 1988.

3. - 28. MAR 1987
Cephalopods from Bongo samples

Station No.	Date	Cephalopod specimens	Mantle length
90/BGO	12 MAR	*Brachioteuthis riisei*	7.3 mm
91/BGO1	12 MAR	*Brachioteuthis riisei*	10.6 mm
C92/BGO2	03 MAR	*Brachioteuthis riisei*	34.4 mm
93/BGO2	13 MAR	*Brachioteuthis riisei*	10.9 mm
		Brachioteuthis riisei	6.9 mm
C105/BGO	06 MAR	*Brachioteuthis riisei*	16.4 mm
C124/BGO	08 MAR	*Brachioteuthis riisei*	8.1 mm
		Brachioteuthis riisei	5.1 mm
C128/BGO2	10 MAR	*Brachioteuthis riisei*	6.9 mm
		Brachioteuthis riisei	4.7 mm
C134/BGO1	11 MAR	*Brachioteuthis riisei*	7.5 mm
C134/BGO2	11 MAR	*Brachioteuthis riisei*	13.8 mm
C210/BGO1	28 MAR	*Brachioteuthis riisei*	6.9 mm

Summary:	N=13	*Brachioteuthis riisei*
Total:	N=13	Cephalopod specimens

Summer 1988 (MAR 1988)
Cephalopods from Bongo samples

Station No.	Date	Cephalopod specimens	Mantle length
S4/BGO	05 MAR	*Gonatus antarcticus*	5.4 mm
NS/BGO	24 MAR	*Gonatus antarcticus*	7.9 mm

Summary:	N= 2	*Gonatus antarcticus*
Total:	N= 2	Cephalopod specimens

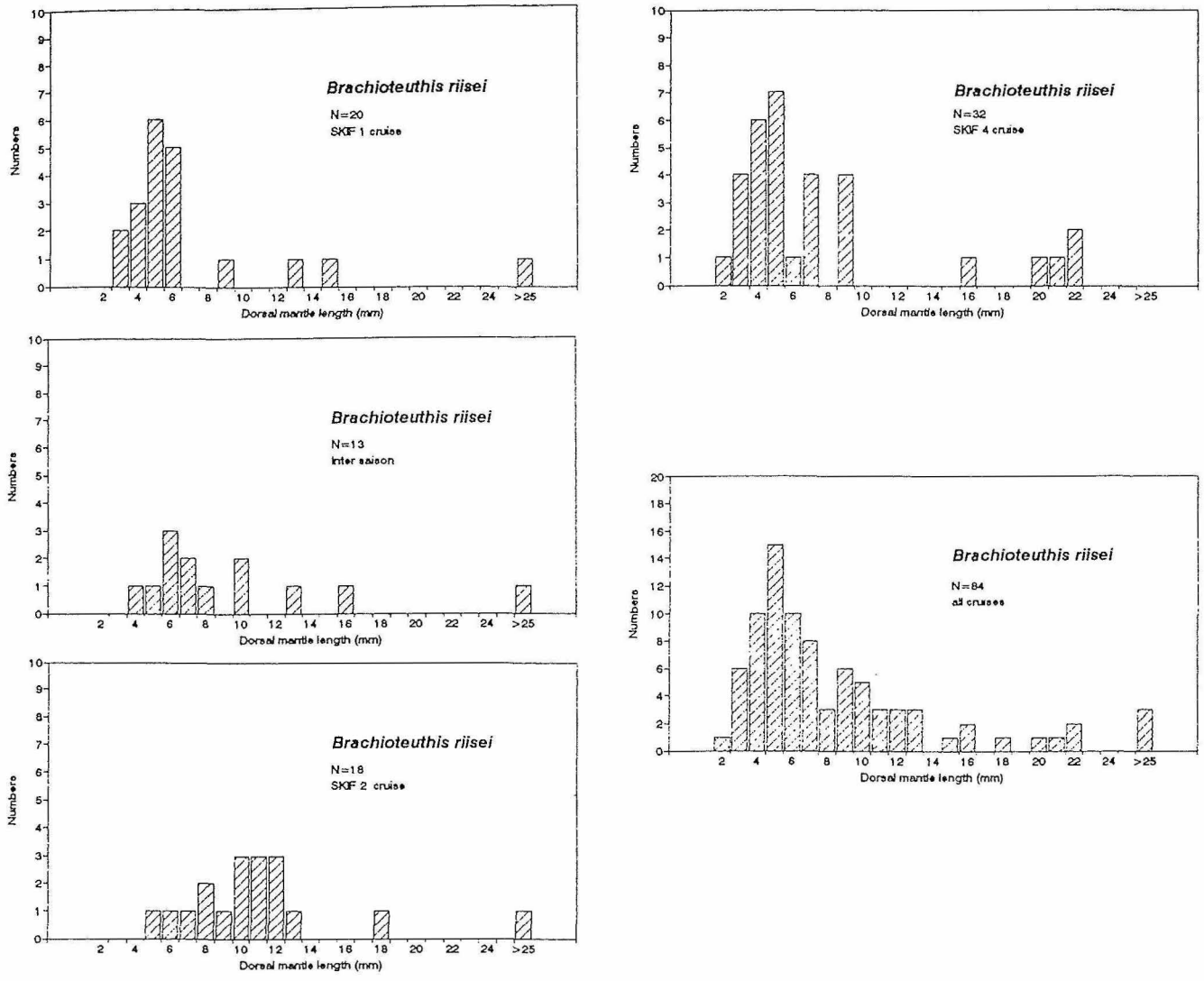

Fig. 1 - Measurements of Brachioteuthis riisei for each cruise of "SKIF". Bongo net. Dorsal mantle length in mm.

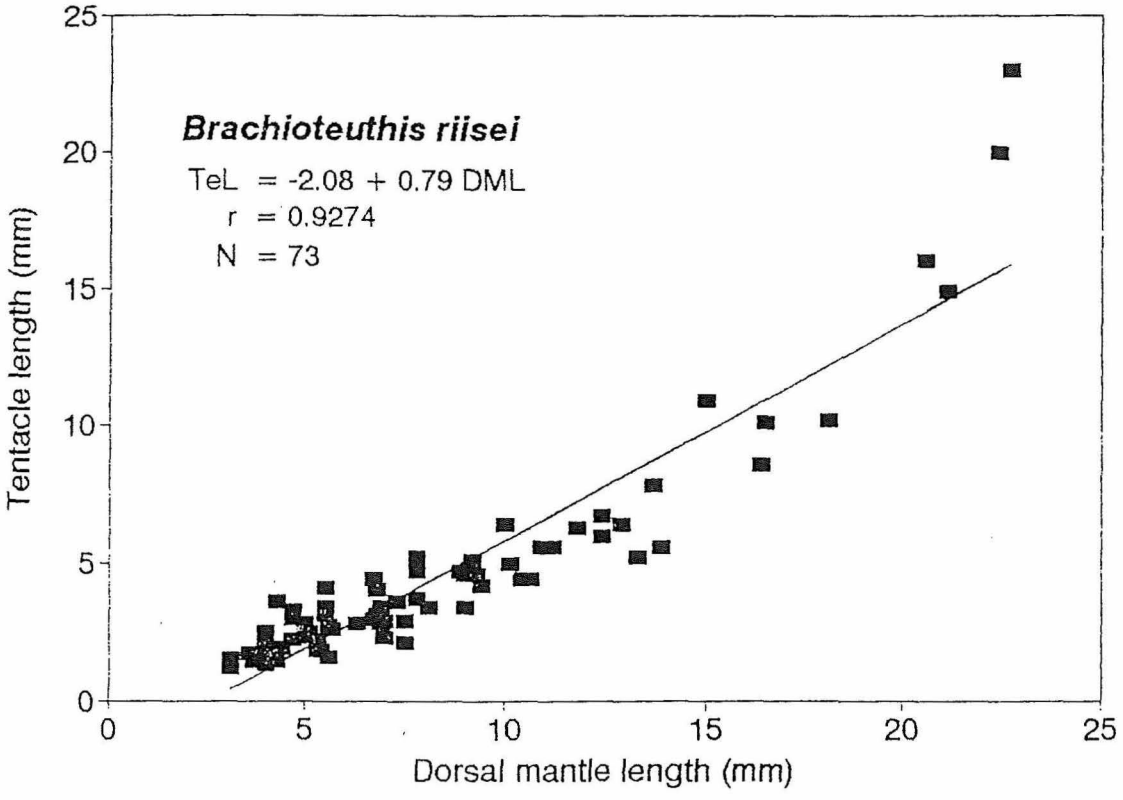

Fig. 2 - Dorsal mantle (DML)/ tentacle (TeL) lengths relationships of Brachioteuthis riisei paralarvae from Bongo net catches of "SKIF" cruises 1987 and 1988.